WHAT IS CLAIMED IS:

1. A method for reducing or preventing excess body fat in a mammal comprising administering to the mammal a compound that increases Shp2 activity in an amount sufficient to treat, reduce, or prevent a higher than desired total body weight or a higher than desired percentage of body fat.

2. The method of Claim 1, wherein said compound increases Shp2 activity in neurons of said mammal.

3. The method of Claim 2, wherein said compound increases Shp2 activity in neurons of forebrain of said mammal.

4. The method of Claim 3, wherein said compound increases Shp2 activity in neurons of hypothalamus of said mammal.

5. The method of Claim 1, wherein said compound increases a level of Shp2 mRNA or protein, an activity of Shp2, a half-life of Shp2 mRNA or protein, or a binding of Shp2 to a leptin receptor.

6. The method of Claim 5, wherein said compound is a Shp2 agonist.

7. A method of treating, stabilizing or preventing a lower than desired total body weight or a lower than desired percentage of body fat in a mammal comprising administering to the mammal a compound that decreases Shp2 activity in an amount sufficient to treat or prevent lower than desired total body weight or lower than desired percentage of body fat.

8. The method of Claim 7, wherein said compound decreases Shp2 activity in neurons of said mammal.

9. The method of Claim 8, wherein said compound decreases Shp2 activity in neurons of forebrain of said mammal.

10. The method of Claim 9, wherein said compound decreases Shp2 activity in neurons of hypothalamus of said mammal.

11. The method of Claim 7, wherein said compound decreases a level of Shp2 mRNA or protein, an activity of Shp2, a half-life of Shp2 mRNA or protein, or a binding of Shp2 to a leptin receptor.

12. The method of Claim 11, wherein said compound is a Shp2 antagonist.

13. A screening method for determining a compound useful for treating, stabilizing, or preventing a higher than desired total body weight or a higher than desired percentage of body fat in a mammal, said method comprising:

contacting a cell, a tissue or a mammal with said compound; and

measuring Shp2 activity in said cell, tissue, or mammal in the presence and absence of the compound, wherein the compound is determined to treat, stabilize, or

prevent a higher than desired total body weight or a higher than desired percentage of body fat if the compound increases the level of Shp2 mRNA or protein, an activity of Shp2, a half-life of Shp2 mRNA or protein, or a binding of Shp2 to a leptin receptor.

14. A screening method for determining a compound useful for treating, stabilizing, or preventing a lower than desired total body weight or a lower than desired percentage of body fat in a mammal, said method comprising

contacting a cell, a tissue or a mammal with said compound; and

measuring Shp2 activity in said cell, tissue, or mammal in the presence and absence of the compound, wherein the compound is determined to treat, stabilize, or prevent a lower than desired total body weight or a lower than desired percentage of body fat if the compound decreases the level of Shp2 mRNA or protein, an activity of Shp2, a half-life of Shp2 mRNA or protein, or a binding of Shp2 to a leptin receptor.

15. A pharmaceutical composition for the treatment of body weight disorders comprising a pharmaceutically acceptable carrier and a therapeutically effective amount of a compound or combination of compounds that modulate Shp2 activity.

16. The pharmaceutical composition of Claim 15, wherein said body weight disorders comprise obesity-related disorders and disorders associated with excessive weight loss.

17. The pharmaceutical composition of Claim 16, wherein the obesity-related diseases comprise hyperlipidemia, atherosclerosis, diabetes, and hypertension.

18. The pharmaceutical composition of Claim 16, wherein the disorders associated with excessive weight loss comprise cachexia, cancer-related weight loss, AIDS-related weight loss, chronic inflammatory disease-related weight loss, and anorexia.

19. Use of a compound that increases Shp2 activity in the preparation of a medicament for reducing or preventing excess body fat in a mammal.

20. The use of Claim 19, wherein said compound increases Shp2 activity in neurons of said mammal.

21. The use of Claim 20, wherein said compound increases Shp2 activity in neurons of forebrain of said mammal.

22. The use of Claim 21, wherein said compound increases Shp2 activity in neurons of hypothalamus of said mammal.

23. Use of a compound that decreases Shp2 activity in the preparation of a medicament for treating, stabilizing or preventing a lower than desired total body weight in a mammal.

24. The use of Claim 23, wherein said compound decreases Shp2 activity in neurons of said mammal.

25. The use of Claim 24, wherein said compound decreases Shp2 activity in neurons of forebrain of said mammal.

26. The use of Claim 25, wherein said compound decreases Shp2 activity in neurons of hypothalamus of said mammal.